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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
WASHINGTON 25, D. C.

In cooperation with State, Federal and Other Agencies

COTTON INSECT CONDITIONS -- JUNE 16, 1950
(Third Cotton Insect Survey Report for 1950)

Although the boll weevil situation improved during the past week, the weevils are abundant in most cotton fields in all of the 12 States where this is the most serious pest of cotton. Hot, dry weather helped the farmers in parts of all of these States, but the periods of hot, dry weather were too short. More spot poisoning for boll weevil control has been done this spring than ever before. Reports of much spot poisoning have been received from Alabama, Arkansas, Louisiana, Mississippi, Texas, and other States.

Weather was generally favorable for cotton and boll weevils have continued to emerge from hibernation in large numbers in many areas.

Unless checked by insecticides, or by hot dry weather the weevils might cause as much damage during July and August as they did in 1949. In this connection the release issued on May 5, 1950 by the Crop Reporting Board, Bureau of Agricultural Economics, U. S. Department of Agriculture, gives the estimated reduction from full yield of cotton per acre caused by the boll weevil and other insects in 1949. Excerpts from this release are given later in this report. On a percentage basis the greatest reductions in yield of cotton per acre caused by insects in 1949 were in Georgia, Alabama, South Carolina, North Carolina, Mississippi, Arkansas, and Virginia. The reduction from full yield caused by insects in 1949 was also serious in Florida, Louisiana, Tennessee, Oklahoma, and parts of Texas.

INSECTICIDES

ARKANSAS: Regarding the supplies of insecticides and tractor dusters in Arkansas, Charles Lincoln, Extension Entomologist, wrote on June 13: "Manufacturers of BHC and toxaphene report they are making deliveries on back orders from current production. They are unable to stock pile BHC or toxaphene. There have been local price increases recently. Manufacturers of calcium arsenate are hesitant to stock pile heavily because of the apparent preference of farmers for the organics. Shortages of tractor dusters are reported locally.

"Large farm stocks have accumulated since last fall. This is the best place to have the insecticides.

"Farmers who have made no preparation may have difficulty getting materials at the last minute.

"Calcium arsenate is equal to the organics for weevil and unsurpassed for leafworm. Heavier buying of calcium arsenate would ease the current strain on the supply situation."

NORTH CAROLINA: George D. Jones, Extension Entomologist, reported on June 16: "Shortages of insecticides have been reported in some areas and growers are advised to purchase whatever amount of poison necessary for an adequate control program. Probably between 50 and 75 pounds of dust per acre of cotton will be sufficient for the season."

TEXAS: The Brownsville Herald for June 13, had the headline: "BOLL WEEVIL

INFESTATION CAUSING VALLEY SHORTAGE OF INSECTICIDE THREATENED." Excerpts from the article are: "Meanwhile the boll weevil looms as a threat to the remainder of the crop.

"Farmers are depleting the supplies of insecticides in a frantic effort to combat the pest which appeared as an aftermath of the flood.

"Manufacturers in Los Fresnos, Mission, and Weslaco reported that they were completely out of some poisons. Some said they were saving the remaining stores for regular customers."

SOUTH CAROLINA: A News Letter issued by the Clemson Agricultural College, May 27, stated: "All cotton farmers are advised to have delivered to their farms as soon as possible at least 25 pounds of a recommended poison or its equivalent in a liquid for every acre of cotton. This will be enough poison to make the first three applications. The first application should be made as soon as the first squares are seen. The second application seven days later and a third application seven days after the second. Following this third application all fields should be checked at regular intervals to determine if and when additional applications might be needed."

Excerpts from Weekly Cotton Weather Bulletin issued by the Weather Bureau, U. S. Department of Commerce, New Orleans, Louisiana, June 20:

Weather and Cotton over the Belt: The week was hot and generally dry and was thus favorable for growth and cultivation of cotton and for dusting for control of weevils. Weevil infestation continues high over the main Belt with damage to squares increasing, consequently blooming is slow and erratic in coastal and southern portions of the Belt.

TEXAS: Insects still prevalent in considerable number but weather favored control measures.

ARKANSAS: Weather favorable for holding weevils in check.

OKLAHOMA: Fairly favorable weather for keeping weevils in check; some damage from grasshoppers and thrips.

LOUISIANA: Weevils active and damaging with infestation very high; early planted cotton squaring but not setting well because of weevils.

MISSISSIPPI: Weevils extremely heavy and active; damaging squares now forming statewide on older plants; little blooming due weevil damage to squares..

ALABAMA: Weather favorable for holding boll weevils in check; cotton much improved.

GEORGIA: Weather favorable for holding weevils in check.

SOUTH CAROLINA: Warmest of season, weekend with high of 95 to 100 degrees. Dusting active with weather favorable for holding weevils in check but threat still serious.

NORTH CAROLINA: Weevils very active; some dusting for control early part week.

ARIZONA: Lygus and some bollworm and beet armyworm infestations found.

BOLL WEEVIL

VIRGINIA: If conditions continue favorable for the boll weevil during June and July, this pest is likely to be a serious menace in every field in which cotton is grown i the State. As recorded in the first cotton insect survey report for 1950 live boll weevils were found in surface trash during March in Greenville, Nansemond, and Southampton Counties at the average rate of 5,131 weevils per acre. This is very high boll weevil survival. The weevils are now probably more abundant in Virginia than during any previous June. Unless checked by the proper use of insecticides or by hot, dry weather, boll weevil damage will undoubtedly be very high.

On June 15, G. Mallory Boush, Assistant Entomologist, Tidewater Field Station, Holland, reported boll weevils on young cotton on May 23, and since that date, they have been fairly numerous on the growing tips of the young cotton plants.

NORTH CAROLINA: George D. Jones, Extension Entomologist, reported on June 16: "Boll weevils have been found in all major cotton-growing counties in the State. It is now estimated that about 65% of the overwintering weevils have already come out of hibernation in southern areas. These weevils are causing a great deal of damage to both terminal buds and young squares which are now beginning to form."

In 113 unpoisoned fields examined in 24 counties weevils were reported by Mr. Jones as occurring at an average rate of 1,770 per acre during the week ending June 16.

SOUTH CAROLINA: Weather conditions continued favorable for cotton growth and boll weevil emergence. Seventy-nine weevils emerged and were removed from the hibernatio cages at Florence during the week ending June 17, making a total of 655 to date. This compares with 492 in 1949, 7 in 1948, and 147 in 1947.

Boll weevils continue to emerge in an early planted trap plot of 1/5 acre at Florenc in large numbers. A total of 1,180 weevils were collected during the week as compared with 1,032 the previous week. The number removed during the week ending June 17 is the largest number removed in one week since this plot was started in 1938. A total of 3,072 have been taken from the plot to date. This is more than twice as many weevils removed by July 1 in 1939. The emergence in the trap plot as compared with the corresponding week in previous years is as follows:

Year	Weevils Collected	Year	Weevils Collected
1950	3,072	1946	176
1949	1,268	1945	477
1948	401	1944	126
1947	1,021	1943	429

All of the 94 unpoisoned fields examined in 19 counties were infested at an average rate of 68% punctured squares as compared with 30% in 1949 and 16% in 1948. The average infestation of 68% punctured squares in unpoisoned fields is the highest initial infestation ever recorded since the laboratory was established at Florence in 1924. Weevil infestation was found in all of 23 poisoned fields examined in 11 counties at an average rate of 17% punctured squares.

ALABAMA: Boll weevils were found in 45 of 47 fields of young cotton examined by Clifford D. Porterfield in 13 northern counties at an average rate of 726 weevils per acre in infested fields, or an average of 704 in all fields examined. The infestation ranged from 70 to 2,730 weevils per acre. No weevils were found in two fields in Morgan County. The highest weevil populations were reported in Madison, Randolph, Etowah, De Kalb, Marion, Jackson, and Tuscaloosa Counties.

Boll weevils were found in 53 of the 55 cotton fields examined in 11 counties in the central and western part of the State by Glynn B. Wood. No weevils were found in 2 of the 12 fields of young cotton and in the other 10 fields the populations varied from 210 to 1,400 and averaged 609 weevils per acre. Punctured squares were found in all of the 43 fields in which the cotton had squares large enough to be punctured at an average rate of 38% punctured squares. Infestations higher than 50% punctured squares were reported from Lowndes, Perry, Sumter, Greene, Tuscaloosa, and Bibb Counties.

TENNESSEE: Boll weevils were found in all of the 23 fields examined during the week ending June 16 in Fayette, Hardeman, McNairy, and Shelby Counties at the average rate of 822 per acre. The weevil population varied from 50 to 1,500 weevils per acre. The weevils are continuing to come out of hibernation in large numbers in these counties as the average weevil population increased during the week from 668 weevils to 822 weevils per acre. Although reports have not been received from other counties, it is probable that heavy boll weevil infestations occur in Hardin, Wayne, Lawrence, Giles, and many other counties. It is hoped that reports of boll weevil conditions may be received from other counties.

MISSISSIPPI: Dr. Clay Lyle reported on June 19: "The boll weevil situation in Mississippi continues very threatening." Boll weevils were found on 344 of the 440 farms examined in 53 counties. "About 20% or 91 of the farms had cotton squaring and 78 of these had an average infestation of 37% as compared with 25% a year ago. On 349 farms with cotton, 266 had weevils at the rate of 544 per acre as compared with 620 last week and 328 at this time last year.

"Practically all farms outside the Delta are infested and those in the central and northern parts of the State have very heavy populations. Infestations in the Delta are lower and spotted, while an area in the southern part of the State including Pearl River, Lamar, and Marion Counties has a much lower infestation than the average."

In the Delta Counties boll weevils continue to emerge from hibernation. The average number of weevils per acre in the infested fields for the week ending June 16 was 280, a slight increase in the number of weevils per acre over the previous week. Only 52 of the 240 fields examined in the Delta Counties had sufficient squares for making square infestation counts. No punctured squares were found in 6 of these fields. In the other 46 fields the average square infestation was 16% punctured squares. A year ago when 168 fields were examined 54 had squares large enough for infestation counts. The average infestation a year ago was 19% as compared with 16% this week.

Apparently the boll weevil situation in the Delta Counties is similar to what it was one year ago. During the week ending June 16, 1950 boll weevils were found in 109 of the 240 fields examined in 17 counties at the average rate of 280 per acre. A year ago during the week ending June 17, 1949 boll weevils were found in 119 of the 168 fields examined in these 17 counties at the average rate of 167 per acre. Fifty-two of the 240 fields examined last week had squares large enough for making square infestation counts and 46 of the 52 fields had punctured squares at the average rate of 16%. Last year 54 of the 168 fields had squares large enough for the weevils to puncture and 41 of them had punctured squares at the average rate of 19%. A year ago a larger proportion of the fields was infested with weevils but the weevils are more abundant this year in the infested fields. Also in the fields where cotton is squaring the infestations are slightly lower than a year ago.

LOUISIANA: Boll weevil continue to emerge in the hibernation cages at Tallulah in large numbers. The emergence from May 1 to June 16 during the past 19 years is given in the following table:

Year	Boll Weevil Survival in Hibernation Cages from May 1 to June 15	Year	Boll Weevil Survival in Hibernation Cages from May 1 to June 15
	Percent		Percent
1950	12.18	1940	.02*
1949	3.94	1939	1.92
1948	.38*	1938	.76*
1947	1.48	1937	15.06
1946	8.24	1936	.10
1945	12.28	1935	.48*
1944	1.84	1934	4.02
1943	.90	1933	.40
1942	.08*	1932	10.48
1941	13.36		

*Emergence completed

A total of 53,000 cotton plants were examined in 53 fields in Madison Parish from June 7 to 13, finding an average of 864 boll weevils per acre as compared with 657 the previous week. The average number of weevils per acre as compared with past years is as follows:

Year	Plants Examined	Weevils Found	Weevils Per Acre	Year	Plants Examined	Weevils Found	Weevils Per Acre
1950*	53,000	2,543	864	1940	78,000	201	46
1949	30,000	639	383	1939	59,000	439	134
1948	56,000	320	103	1938	48,000	287	108
1947	56,000	832	267	1947	50,000	164	59
1946	52,000	1,275	441	1936**			
1945	56,000	680	219	1935	36,000	337	168
1944	90,200	723	144	1934**			
1943**				1933**			
1942	76,000	202	48	1932**			
1941	72,000	1,194	299				

* June 8 to June 15

** No records made from June 7 to June 13

Examinations made in 176 fields in 19 parishes averaged 691 boll weevils per acre. No weevils were found in 19 fields. The highest infestations exceeding 2,000 weevils per acre were recorded in Caldwell, Avoyelles, Richland, St. Landry, Natchitoches, and Madison Parishes.

ARKANSAS: Charles Lincoln, Extension Entomologist, University of Arkansas, Fayetteville, wrote on June 13: "In small fields in hill areas weevils are generally distributed over the fields. In the delta they are concentrated in large cotton and near hibernation quarters. In Desha County, Mr. Isely found weevils at the rate of 1,350 per acre in one-fourth acre of large cotton around a house. No weevils were found in the rest of the 50-acre field. A perfect situation for spot dusting.

"Weevils in cotton have increased from almost none to very high numbers in the past 3 weeks. Peak of emergence appears to be past. The number of overwintered weevils is expected to decrease from now on because new emergence will not be sufficient to replace those that die. This combined with a late crop will mean a decreasing infestation and a clean break between overwintered and first brood weevils. A single application when cotton begins to square will be highly effective because most of the overwintered weevils will be present or already dead.

"There is considerable fear that weevils will damage plants by feeding on buds. This damage is inconsequential. There is little to gain by applying insecticides until cotton is ready to start squaring."

TEXAS: Boll weevil are increasing rapidly in the Lower Rio Grande Valley and are causing serious damage in many fields. Some fields show practically all squared and most of the boll totally destroyed. In many south central, central, north central, and east central sections of the State the boll weevil is a threat. In the examination of 218 pre-square cotton fields in 18 counties weevils were found at an average rate of 105 per acre. The average square infestation in 208 fields in 34 counties is 20% as compared with 16% punctured squares the previous week. No punctured squares were found in 33 fields; in 63 fields less than 10% were punctured; in 50 fields 11 to 25%; in 35 fields from 26% to 50%; and in 27 fields more than 50% of the squares were punctured.

In McLennan and Falls Counties in central Texas 24,400 seedling cotton plants were examined in 47 fields that had been treated with insecticides and boll weevils were found at an average rate of 15 per acre as compared with an average of 96 weevils per acre in 50 unpoisoned fields.

OKLAHOMA: Boll weevils continue to emerge from hibernation in large numbers. During the week ending June 17 weevil infestation in 95 fields in 12 counties averaged 285 weevils per acre as compared with 227 the previous week. An average of 2,250 weevils per acre was found in one field in Choctaw County. Infestation was also high in McCurtain, Muskogee, Okmulgee, and Tulsa Counties.

COTTON LEAFWORM

TEXAS: Leafworms still remain a potential threat in some areas of southern Texas, but to date no widespread heavy infestations have developed in the United States. A high percentage of the pupae found in the Coastal Area are parasitized. Several thousand acres of cotton have been ragged or stripped in Mexico, adjacent to the Lower Rio Grande Valley. Moths are emerging from this infestation and may be found in rather large numbers in many fields in the Lower Valley.

THRIPS

NORTH CAROLINA: George D. Jones, Extension Entomologist, reported on June 16: "Thrips are very abundant in most of the southern and more western border line counties. These insects are severely damaging cotton in many fields causing leaves to curl and die. In some fields the plants have been stripped of nearly all leaves and only the bare stems remain."

TEXAS: Thrips continue to do damage in some fields in northern areas, especially in Collin, Grayson, and Hunt counties, and light infestations of this insect have been reported from counties in the northwestern part of the State.

ARKANSAS: During the week of June 2 thrips were reported abundant in Crawford, Desha, Jefferson, Lee, Monroe, and Phillips Counties. Charles Lincoln wrote on June 13: "General rains have occurred over most of the delta. With these rains and growth of the cotton plants the thrips and their injury should fade rapidly."

OKLAHOMA: C. F. Stiles, Extension Entomologist, reported on June 17: "Many fields of cotton show that they have been damaged by thrips. During the past week cotton has improved and thrips are hard to find in the fields."

ALABAMA: Thrips were present in all of the 47 fields examined in the northern counties. Two fields in the variety test at the Upper Coastal Plain Substation, Winfield, were heavily damaged.

COTTON APHID

VIRGINIA: G. Mallory Boush, Holland, reported on June 13: "During May and early June a rather general outbreak occurred. There were also a few cases of root aphid reported, and during this period the cotton grew very little."

LOUISIANA: Aphids were reported in most fields examined but predators and parasites were active. Very few heavy aphid infestations were noted.

TEXAS: Aphid infestations continue to be light in all fields.

ALABAMA: Infestations of aphids were found in 60 of the 100 fields examined during the week ending June 17. Eleven were classed as heavy, 15 as moderate, and 34 as light.

MISCELLANEOUS INSECTS

TEXAS: Cutworms and webworms are reported as doing damage in several sections of Hunt County.

OKLAHOMA: C. F. Stiles, Extension Entomologist, reported on June 17: "The yellow-striped cutworm has been reported doing damage in Pawnee County. If this pest is present in large numbers, any of the recommended control practices for other cotton insects will control them."

ALABAMA: Glynn B. Wood reported on June 17 that outbreaks of bollworm were reported in Montgomery and Dallas Counties. Counts made in 11 fields showed an average infestation of 8% of the squares ruined.

MISSISSIPPI: In the examination of 240 cotton fields in 17 Delta counties lepidopterous larvae or damage caused by them were noted in 51 fields; aphids were reported in 47 fields, rapid plant bugs in 7 fields, and damage by thrips in 4 fields.

TENNESSEE: In the examination of 23 cotton fields in Fayette, Hardeman, McNairy, and Shelby Counties, damage by thrips was observed in 6 fields; tarnished plant bugs were noted in 4 fields and rapid plant bugs in 2 fields.

RELEASE ON COTTON PRODUCTION ISSUED MAY 5 BY THE CROP REPORTING BOARD OF THE BUREAU OF AGRICULTURAL ECONOMICS OF THIS DEPARTMENT

Probably most of the persons who read this cotton insect survey report have had an opportunity to read the release on cotton production issued May 5 by the Crop Reporting Board, Bureau of Agricultural Economics, U. S. Department of Agriculture.

Each of the 11 pages contains valuable information that should be of interest to all concerned with cotton production, but the excerpts below from pages 3 and 7 should be of interest to those concerned with the damage to cotton caused by insects. It is hoped that during 1950 insects will not be permitted to cause the serious reduction from full yield that was caused in 11 States in 1949.

EXCERPTS FROM REPORT ON COTTON PRODUCTION RELEASED MAY 5
BY THE CROP REPORTING BOARD
BUREAU OF AGRICULTURAL ECONOMICS, USDA

State	Lint Yield Per Harvested Acre (1949)	Reduction From Full Yield Per Acre Caused By Insects (1949)	Ginnings 1949 Crop As Enumerated By Census
	Pounds	Percent	Bales (500 lb. gross)
Arizona	649	4	544,281
California	634	3	1,268,541
New Mexico	428	5	264,959
Missouri	378	1	457,139
Tennessee	365	13	632,548
Arkansas	309	26	1,639,695
Virginia	305	25	17,637
Louisiana	298	16	652,119
Texas	266	6	6,058,177
Mississippi	261	28	1,484,272
North Carolina	259	28	469,470
Alabama	226	32	858,812
Oklahoma	225	10	600,599
South Carolina	209	31	553,653
Georgia	181	37	604,848
Florida	153	18	8,943

The four States (Arizona, California, New Mexico, and Missouri) in which the average yield of lint cotton per acre was highest are the four States that did not have to contend with the boll weevil and where insects caused the least damage to cotton in 1949.

In the next three States (Tennessee, Arkansas, and Virginia) with average yields above 300 pounds of lint per acre, there were large areas that were either not reached by the boll weevil in 1949 or the weevil reached them too late to cause serious reduction in yield. The twelve States at the bottom of the list in production of lint cotton per acre in 1949 are the twelve States that had all the boll weevils.

The two States with the lowest yield per acre in 1949 are the only cotton-growing States that did not have the services of Extension Entomologists to help the county agents and cotton growers with their cotton insect control problems.

PREPARED JUNE 23, 1950.

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U. S. DEPARTMENT OF AGRICULTURE